

5 **ABSTRACT OF THE DISCLOSURE**

 A system and method for fast peak finding in an optical spectrum prioritizes the information it first generates and how the information is then forwarded from the system to a host computer, for example. A spectrum detection subsystem generates a spectrum of an optical signal. An analog-to-digital converter converts the spectrum into sample data. Finally,
10 a data processing subsystem first detects the spectral locations of peaks in the spectrum using the sample data and then uploads the peak information to a host computer before performing processing to determine the shapes of the peaks and/or noise information for the optical signal, for example. The system is thus able to quickly find some information, such as whether or not channels or carriers are present, at what frequency the carriers are operating, and the carriers'
15 power level, and send this information to the host computer. In contrast, information concerning spectral shape or the noise floor sent later in time.